CATJ

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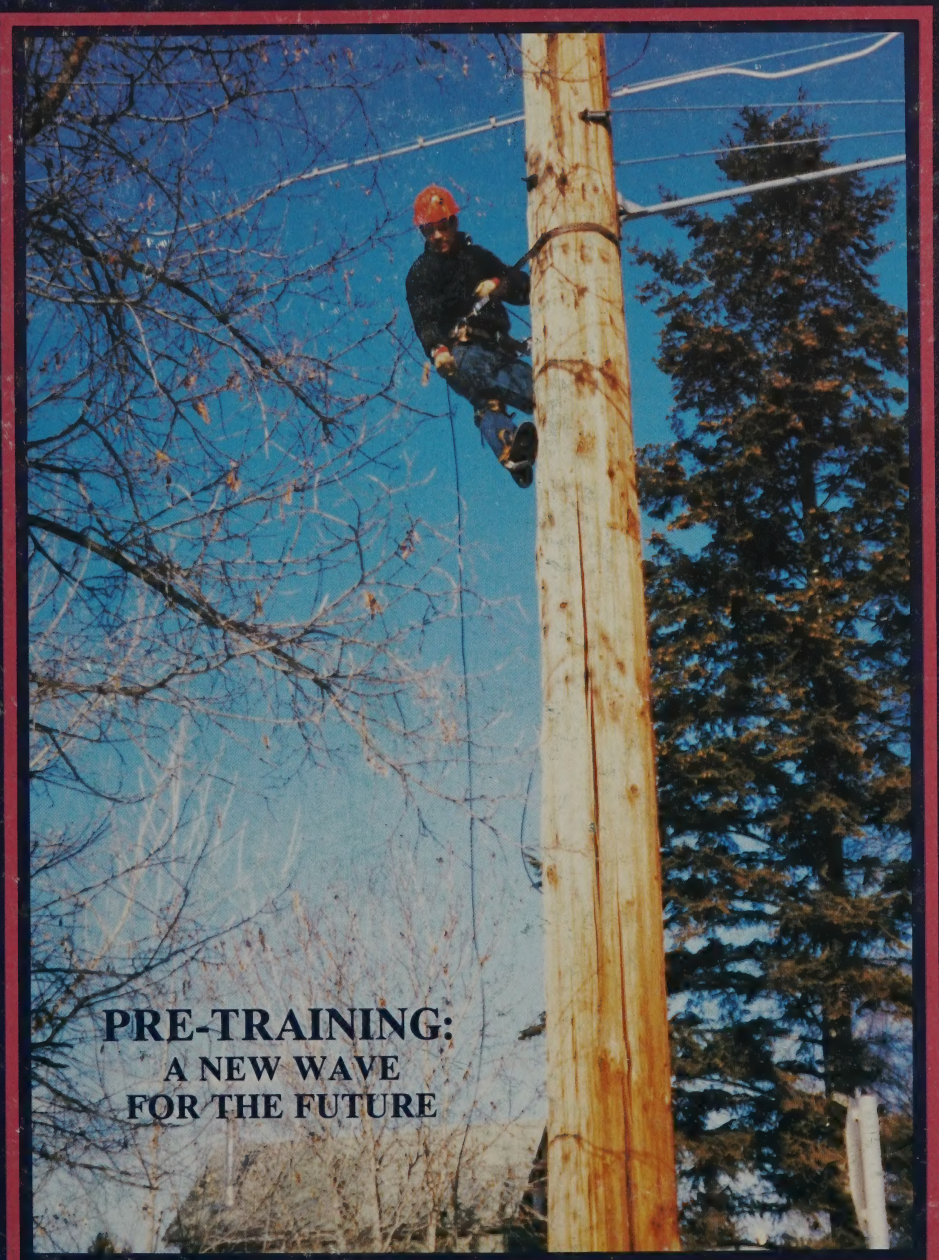

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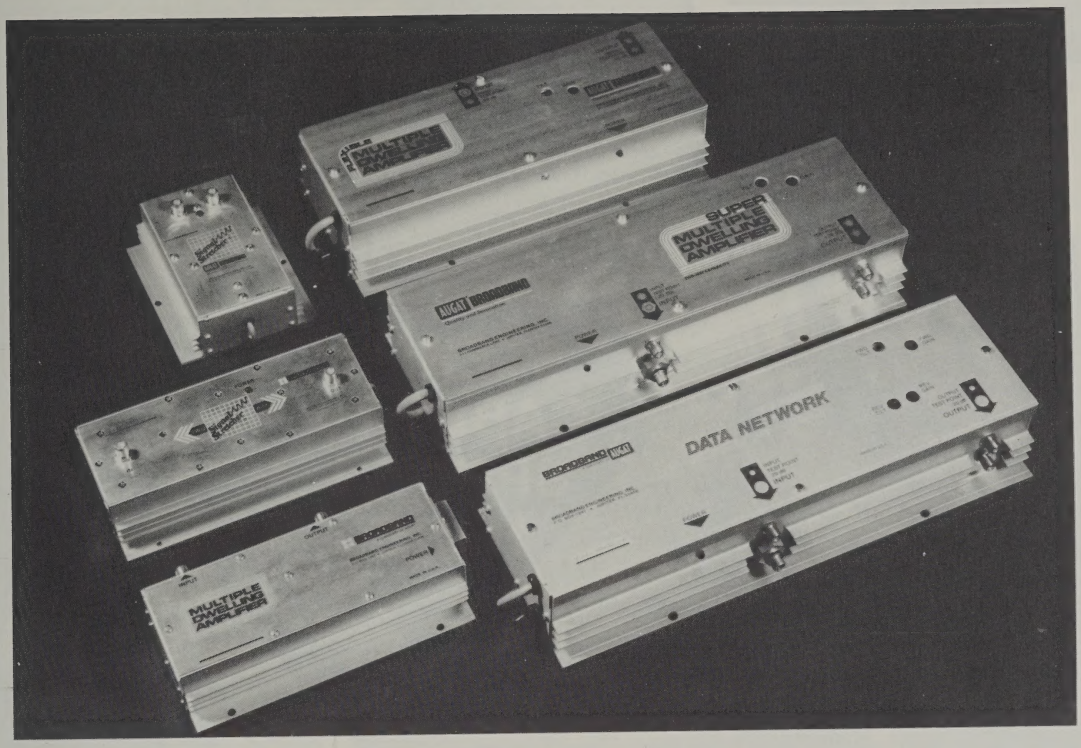

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catatorial

Carl Schmauder CATA'S CHAIRMAN OF THE BOARD

PLEASE

CATA tends not to ask very much of its members. We know that you are very busy in the day to day job of running your business and our jobs is to help you do that — so we are usually on the "answering" side, and CATA members are on the "asking" side. That's as it should be. CATA is here to serve its members. But, as you will see, I am about to ask you to do several things... All of them are important, all of them directly affect your business, and you are the only one who can do them.

First, let's focus on what needs to be done **IMMEDIATELY.** The lead article in both last month's and this month's Washington Update have focused on the current chaos being created on Capitol Hill over the issue of scrambling. The marketplace is working — it is the politicians who aren't! They don't want to hear that there really are answers to their questions. Instead they seem to want to succumb to "Video Terrorism" in the quest for single issue voters in their district who are demanding free satellite service (in the form of a moratorium) in exchange for their votes. The terrorists are very effective. After all, they have spent thousands of dollars for their equipment, and now they want to get the programming for free, the way the ads said they would when they bought the stuff. The equipment seller is long gone, so the only one to yell at is Congress — and they are yelling — loud!

The number of letters going to Congressional offices from folks demanding a "free lunch" is impressive. The cable industry, let alone cable subscribers, has not responded in kind. Therefore, at the moment this is a very one-sided debate. And, as we note in the accompanying articles, there really isn't much of a debate. This is vote counting time — don't confuse them with the facts. **There is no way CATA and the NCTA can do this for you.** We have the answers to the questions. We have the logic. We have the issues on our side. It doesn't matter. What counts is letters from constituents! **YOU** are the constituent. Your office staff, your technicians, your subscribers — they are all constituents. We MUST let the folks on Capitol Hill know that for every "free lunch" they give away, someone else has to pay! We have to let them know that they cannot possibly say today that the "marketplace is not working" since the market is really only 6 months old! How can they know that the prices being charged are not right, or that the market structure is wrong — that is BIG GOVERNMENT thinking at its worst! They, like most Socialist countries seem to think that they know exactly how the economy and the market should run — so they are going to force it to do their bidding! We have to let them know that there are lots of folks who don't think more BIG GOVERNMENT is the way to do things!

The only way for that to happen is for you to do it — **right now.** We can't write the letters for you. If you need information to include in your letter that we have not already provided, call the office — we'll help. But YOU and your staff, and your spouses, and your mayors and your friends have to write — and write NOW! If you value your business you must get involved in protecting it. We are not opposed to the earth terminal business — but it has to fit into the marketplace just like every other business — not be

forced into a special place by the power of BIG GOVERNMENT and the threats of "video terrorists" at the expense of the entire remaining market structure and the integrity of the communications system!

We are out of time on this issue. Something could happen any day. Please, it's your business.

On a totally different subject, we are also going to ask you to do two things: first, come to the CATA Show in Reno, on July 15-17, and bring the workers in your system with you! This is a working show! It is for the working people in the cable industry. The whole idea is to learn from each other. Your employees and system managers can't learn if they aren't there! This is especially true for our many Corporate Members. The whole point about "decentralizing" management, which many companies are now doing, is to give more authority and responsibility to local and regional managers. With that responsibility comes the need for more interaction with their peers and more independent thinking as to how to improve the systems they run. The best way to learn is from other folks who are doing it! That's what the CATA Show is all about.

And second, please make your planned equipment purchases at the Show. You are going to be buying equipment and services anyway — why not do it in an atmosphere where everyone "wins". The important thing here is that the CATA Associate members exhibit at the Show not only to provide support for CATA, but to seek support from CATA members as well. They deserve our support. The best way to show them that they are getting it is to sign the contracts at the Show. That is tangible evidence that companies can see that their dollars are being well spent on CATA. You are going to spend those dollars anyway — so help yourself, help CATA, and help the CATA Associate members exhibiting at the Show by planning all your purchases for July 15-17 in Reno. □

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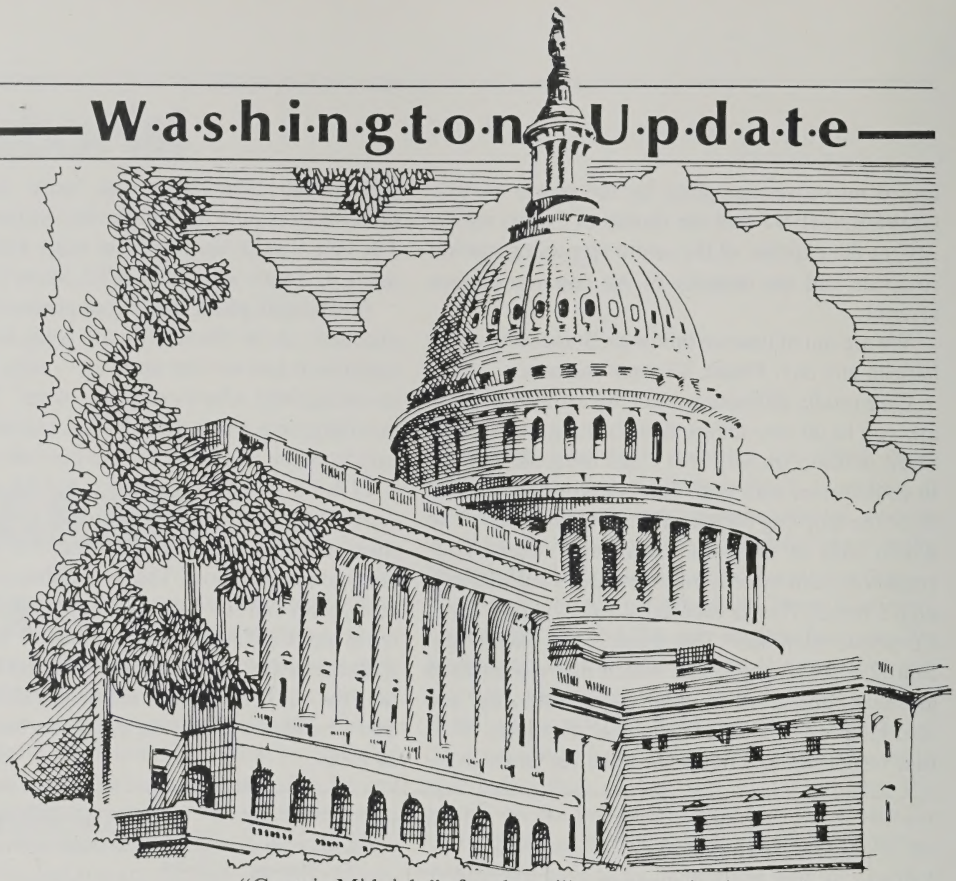
Washington Update



Is Congress Giving In To Video Terrorists?

We know, that's a very strong term, but we were not the first ones to use it. The situation with some home earth terminal folks fighting for what they think is their "right" to take programming and equipment at rates that they set — or for free, which is what some of them still demand, has gotten so serious that House Telecommunications Subcommittee Chief Tom Rogers recently decried the "video terrorism" inherent in the actions of "Captain Midnight" after that still unidentified partisan interfered with an HBO satellite feed.

The importance of that event was that it may have finally driven home on Capitol Hill the point that this debate is not simply about what HBO or Showtime should cost for rural folks. It is not just a question of whether a manufacturer which risks a lot of money to develop a new technology should have the right to recover its costs and make a profit — it is about the integrity of the communications system with which we all have to live.

Captain Midnight did us a favor. He showed just how vulnerable the communications distribution system is. And not just for HBO, but for all our bank data, telephone communications, private teleconferences, and everything else, including military communications that uses satellites. Now the discussions have broadened a bit. There is a realization that the notion that folks who buy home earth terminals should have automatic access (at whatever price) to anything on the satellites is not only silly — it's dangerous!

Of course, the argument is made that the home earth terminal folks are not seeking access to everything, just the programming available to cable — well, not really, they also want access to the network feeds, the network backhaul feeds, the sports feeds, and anything else they deem it interesting to intercept. They don't say that publicly, but in lobbying memos

recently, SPACE advised its members to bombard Capitol Hill again in an effort to derail a bill that would insure the privacy of teleconferencing via satellite! The telephone calls flowed in to the various Congressional offices, but to no avail. The privacy bill went forward.

And this is a very important point for members of Congress to understand that while they are being threatened (yes, threatened) by the very devoted coterie of earth terminal enthusiasts unless they vote the "right" way on various HTVRO efforts to achieve a "moratorium" or rate regulation on an industry that hasn't yet even been defined, Congressmen who are INFORMED about the issues are on very solid ground in resisting the pressures being brought by the "video terrorists". Yes, it is true that those folks can generate a lot of letters and phone calls. We know that some Congressional Staffers have been harangued with vulgar phone calls and worse. One of the main grassroots lobbying groups in the HTVRO business calls itself "The Family", and there have been quite a few obscene phone calls and even bomb and death threats to those in the forefront of the effort to achieve a secure environment for the delivery of satellite television. We must characterize these events for what they are: terrorism. They are designed to achieve a very specific result: the blocking, either by legislative delay or economic pressure, of scrambling. Why? Well, we can only surmise that there are truly a lot of folks out there who were misled in the "heyday" of the fly-by-night earth terminal sellers. They were told that they would be able to take all this programming off the satellites for free — the only thing they had to do was pay several thousand dollars for the dish. They did that. No one thought, at the time, of regulating the rates of the dishes — if they are as important to rural America as some Congressmen now claim, why not do it now? No, they are only interested in regulating the rate of the descramblers! Doesn't that strike anyone as odd?

Anyway, these folks who paid for the dish at full price probably can't go back to the "dealer" and complain — he or she is long gone, on to some other lucrative venture. So they have only one recourse: make the cable folks the "bad guys" for trying to protect the integrity of their programming product and the distribution system itself! At any other time cooler heads would definitely prevail in this situation and Congress would recognize the dangers inherent in either compromising the integrity of a private (NOTE — C-Band Satellite Transmissions are NOT allocated as broadcast frequencies — they are specifically allocated for PRIVATE communications) networking technology or trying to claim that "Big Government" in Washington can micro-regulate the costs and business relationships that are developing in an entire new industry!

But this is not a normal time. This is election time. And that is the time that terrorists have the easiest target in Congress. Threaten to vote them out of office if they don't fork over "free" programming. Disrupt election speeches to raise the issue — have a small group of very dedicated folks generate a whopping amount of mail and you may just be able to get Congress to do your bidding! Will Congress give in to video terrorists? We will have to wait and see. There certainly is a lot going on right now, as we told you last month. The Senate side is particularly active. Bills are popping out of the woodwork and there may even be a "sense of the Senate" resolution passed before this issue gets to you!

What can you do? WRITE - CALL - MEET with your elected representatives NOW! Pull out all the plugs. Get all of your staff to send letters — not just one, but a continuing flow to explain the issue over, and over, and over again if necessary. There is plenty of misinformation being intentionally spread to get Congressional folks upset about this issue. If you need any facts to put in your letters, call us, or have your representative's aides call us. We will be happy to answer any inquiry on this subject. We are not kidding, though — if the letters (plural) don't start pouring in responding to this thing, the terrorists will win, and ironically it will be the majority of home earth terminal owners and suppliers in the market today who will be the biggest losers.

Why? Well, we fully recognize that the threats and the nasty phone calls and efforts at jamming ►

the satellites or building "black boxes" to break the scrambling codes are being done by a small minority of the earth terminal owners. Far greater numbers of HTVRO owners are serious, upstanding folks who have no other effective way to get television. But they are the ones who are accommodating to the developing market. They are the ones who are buying the descramblers. They are signing up for the programming they want to watch and they are not objecting to paying a price that is roughly equal to what their compatriots, the cable subscribers pay. They are the ones who get hurt if some sort of "moratorium" is passed. The law abiding folks find out that the "winners" are the terrorists! That is not a terribly smart message for our Congressman to be sending!

What's worse, the entire future of the home earth terminal industry would be threatened by any election-time "quick-fix" of the so-called "scrambling" issue. Just think about it: Here we have a market that is just settling down and becoming "legitimate" after several years of "free lunch" turmoil. When the cable industry tried to warn consumers several years ago that scrambling was on the way — to know what you were buying — we were shouted down by the hucksters. When scrambling actually started at the beginning of this year, the market collapsed and the hucksters went out of business. Earth terminal sales dropped through the floor. It wasn't as easy to sell a dish if you really had to tell folks that they would have to pay for the programming they received, just like everyone else.

But many earth terminal dealers, the responsible ones, have survived. Sales are now starting to pick up again. People are buying with full disclosure of what they are getting into. And the market is, to say the least, dynamic. Competition among programmers is already affecting pricing policies — as it does in any market. So what would happen if there was suddenly some Congressional election-time quick fix? Well, all the responsible dealers would be at the mercy of the fly-by-nighters again. The "free lunch bunch" would be back in force for as long as the "moratorium" or "rate study" lasted. Of course, at some point it would end — and then the task of building the legitimate market would have to begin a second time! Will there be enough responsible dealers left by then? What about all the inventories of descramblers? What would happen to all the manufacturers who have begun integrating the descramblers into their product lines at competitive prices?

It would appear that the biggest threat to the continued development of a rational market for the home earth terminal business is the excessive "Big Brother" activity going on on Capitol Hill which continues to disrupt the development of the market. If another major change in the rules of the game is thrown at that market in the near future, it may be wonderful for the folks who already have terminals and will get "free" programming for a while longer — but it will be a long-term disaster for the development of a whole new and valuable need of communication — the home earth terminal.

Does all this sound a little strange, the cable industry lamenting the possible fate of the earth terminal industry if Congress gives in to the "free lunch" bunch? It shouldn't. Cable has never opposed the legitimate development of the home earth terminal business. Indeed we were the ones that created the industry in the first place. But not at the expense of losing our own identity, our own ability to have differentiation of product, and our own right to use communications systems without fear of forced dissemination of our product or video terrorism.

The bottom line is that you **MUST** become active, right now, in this ongoing discussion if we have any home of explaining what is really going on to Congress. Here are some of the answers to the most commonly asked questions for your assistance:

Q. Shouldn't we have a scrambling moratorium because the availability of descramblers is insufficient and the price is too high — it is unfair to the home terminal owner?

A. *There are hundreds of thousands of descramblers available. They can be ordered (800-672-9597, 800-672-6190, or 919-693-8081) directly from the manufacturers, distributors, or in many cases local cable companies or earth terminal suppliers. They can be delivered within 24 hours if*

so desired. The list price at the moment is $395. That price will come down as soon as there is sufficient consumer demand — just like any other consumer product. The Congress did not decide it had to regulate the price of computers, or calculators or cars or earth terminals for that matter when they first came on the market just because the initial list price was high — why descramblers?

Q. Yes, but there aren't enough descramblers available for all home terminals — shouldn't we wait till there are?

A. *That is an economic impossibility. Manufacturers will not continue to build a product that people don't, or won't buy — especially if the product is useless because of a moratorium! Such a moratorium or attempts to regulate the price of a new consumer item only slow down, and possibly kill the market - not stabilize it. We should also point out that a "moratorium" on scrambling — particularly if it attempted to stop those who have already scrambled from continuing to do so would probably be illegal. Both the First and Fifth Amendment rights of programmers would be violated and legal restrictions on the government's ability to interfere with legitimate business activities to the direct detriment of particular companies would also be grounds for legal challenge. There is little question that any such laws would be taken to court, so "free" TV would not be an immediate election-time prospect even if such a bill were passed. The only thing that would certainly happen is the generation of a great deal more confusion and Court delay — which could only depress the HTVRO market further.*

Q. Wouldn't the whole issue go away if the programmers simply allowed third-party packagers to sell the programs to the HTVRO market — that is, someone rather than the program owner or the cable operator?

A. *Such a requirement would violate the First Amendment rights of the programmers. Congress would be getting into the business of telling an editor WHO he must deal with in terms of selling his product and HOW that* ►

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product must be disseminated. That's like telling The Reader's Digest, for instance, that they cannot simply sell their books directly to the public, at a price they choose, through the mail — that they must also provide the books to discount book sellers at a wholesale price to be determined or approved by the Federal Government! That may be the way things work in Socialist societies, but not here!

Q. But isn't the price being charged to the HTVRO owner outrageously high?

A. *No. The pay programming channels that are now available to the HTVRO market are being sold at prices roughly comparable to the retail price cable subscribers pay. In actuality, the cable subscriber pays considerably more because in most cases he or she must buy the "Basic" cable service for from $8 to $14 before the pay programming is available for purchase! As to non-pay programming, it is easy to show that cable operators, in most cases, pay MORE per viewer for the programming than is being asked of the HTVRO home. In addition, of course, the HTVRO sales cost (the "transactional cost") is far higher than the cable sales cost to the programmer, — thus the cost for an individual sale is always likely to reflect the higher costs of scrambling and marketing on a retail rather than a wholesale level. Finally, it should be pointed out that the entire industry is only months old. The cable industry is just being price deregulated after 20 years of development and there are still raging debates within the marketing departments of the industry regarding the "correct" price for cable product. How can some Congressman, with absolute equanimity, say after only months of a new market experience that THEY know what all the prices and the market structures should be? The only way we will ever find out what the true market value of programming product is will be to let the consumer decide the issue — not the Federal Government.*

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C-SPAN Senate Coverage Starts With Tax Bill Debate

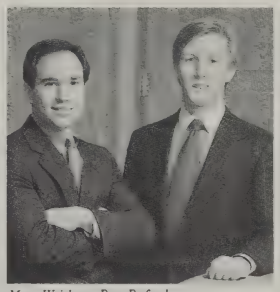
It couldn't be a better time for C-SPAN to have finally gotten the go-ahead for coverage of the Senate Floor for a trial period. Coverage starts full time on June 2. That's the day the Senate is scheduled to start debate on the most sweeping tax reforms in the last decade! It has got to be a great draw, and you should take advantage of it. Here are the rules of the game as adopted in a statement of principle by the C-SPAN Board (CATA's Chairman is on that Board): C-SPAN 2, which will carry the Senate floor debates gavel to gavel is available only to operators who carry C-SPAN (the House). If you cannot carry C-SPAN 2 full time because of channel limitations, you can carry parts of it so long as you do not do so at the expense of C-SPAN! That's very important. You don't ever want to put yourself in the situation where you are deciding to carry one body as opposed to the other — just one in addition to the other. For this six week trial period we know of some folks who don't have capacity who are going to put C-SPAN 2 on the local origination channel, or anywhere else they can find — the tax debates are too important to miss! Try it, you'll like it! And it is great for your system, your subscribers, the cable industry and the country.

By the way, due to the concerted efforts of a lot of folks, C-SPAN has finally been included on the House Telecommunications system. Congratulations.

New FCC Fees

Some of you will remember that long ago we all had to pay a fee to the FCC whenever we filed anything. Well, the courts threw out those fees in the mid-1970's and they have just been a memory, until now. Congress has adopted a new fee structure and it will affect some cable operators. If you have a CARS microwave system, from now on any filing for a construction permit, assignment and transfer, renewal or modification will have to be accompanied by a check for $135. Special relief petitions (there are virtually none left since the rule changes) will cost $700. □

BIG NEWS FOR SMALL SYSTEMS.



Marc Weisberg, Ross Buford

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SCRAPBOOK:

PRE-TRAINING
A NEW WAVE FOR THE FUTURE

by: Kip Hayes
Owner/Instructor
School of Communication
Kalispell, MT.

TRAINING HISTORY

Training has always been widely accepted as a valuable and required tool for a quality work force. In my 12 years experience in the cable tv industry, many experimental training programs have passed before my eyes. The programs are usually well organized and look spectacular on paper, but do they work? The usual program is one or two hours per week and has a normal life expectancy of 3 months. The first few sessions get rave reviews from all who participate and expectations soar. Suddenly, the Marketing Department comes up with a great idea — "discounted installs." Before the big sale, you have a layed-back backlog of ONLY 5 days. Now you must scramble to maintain the customer service image! What happened to the training program? Who will go out to help the new installer off the pole? (The next lesson was how to descend the pole after the job is complete.)

Students In Action!

OBJECTIVITY MEANS QUALITY

Why not start with a pre-trained employee? I'm sure that many mistakes have been when hiring entry-level employees. No business, and certainly not the fast growing business of cable television, can afford the risk of hiring the wrong people on speculation. Both — the prospective employer and the prospective employee — require some assurance that the investment you will make will be worth while. That means as an employer we must act objectively and not emotionally when hiring is done.

SITUATION

Think, if you will for a minute — the person who just walked into your cable system or construction office, is asking if you have any jobs available for work in the field. They heard that cable tv was an outside job and that sounds like

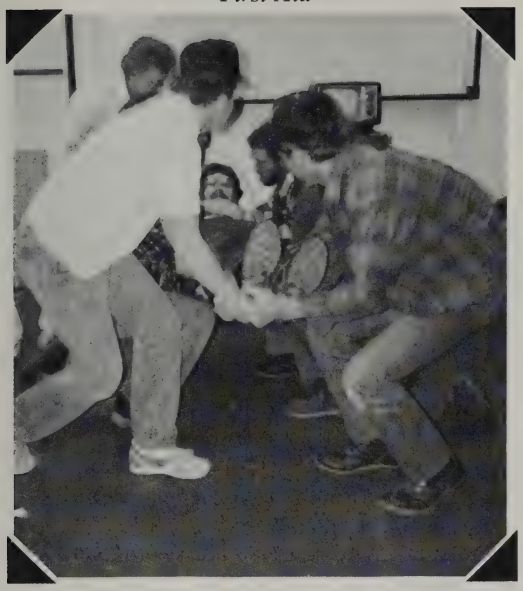
System Design

Pole Climbing Skills

just what they want. If you have at present, or in your plan, the need for a good quality employee, a few questions come to mind.

1. How much does this person know about cable?
2. Is this person motivated?
3. Will they be willing to make a commitment to the subscriber, the work force, and to the system itself?
4. Can they be taught the basics in a short period of time and get out into production?
5. If put into a situation which requires climbing poles or ladders, will they be able to carry through with the required job functions?
6. Will they stick to the job and continue to learn on their own?

First Aid



Pole-Top Rescue

SOLUTION

In Kalispell, MT., a new kind of cable tv training has just started under the name of UNICOM — School of Communication, with the objective being to train entry-level employees in customer service, installations, construction and pole climbing. The curriculum is designed to be covered in a five-week period, with sixty percent (60%) of the training being hands-on and the remainder, forty percent (40%) academic classroom work, at a cost of $1500.00. Some of the presentation is done by video tape presentation and guest speakers on subjects like MDS systems, microwave transportaion, pole climbing, cable installation, and home satellite installation.

STUDENT SELECTION

All prospective students are interviewed and their job skills evaluated by the instructor and a placement counseler where applicable. The main concentration of the interview process is to discover the person's motivation and attitude, and of the applications, after screening, approximately 75% are accepted. Can they make it in cable tv? Once a student is accepted he is required to complete 5 weeks (200 hours) of intense study and hands on experience. ►

April, 1986

SOLD

PRINCETON CABLE TV

serving 3,700 basic and 1,700 pay t.v. subscribers in Princeton, Wyanet and Tiskilwa, Illinois has been sold to

ENSTAR COMMUNICATIONS CORP.

of Atlanta, Georgia

The undersigned represented the seller in this transaction. This notice appears as a matter of record only.

851 Lincoln Center
5401 W. Kennedy Blvd.
Tampa, FL 33609 813/877-8844

1255 23rd Street, N.W.
Suite 650
Washington, DC 20037 202/857-2535

COMMUNICATIONS EQUITY ASSOCIATES

Ground Level Line Construction

WHAT SHOULD BE LEARNED

Let us go back to the person who just walked into our cable system. Do you remember the questions that came to mind? The graduate from a good pre-training school will understand customer service, pole climbing, system design, line construction, installations, and prewire techniques. Upon completion of class, each student will have "bought in", demonstrating his/her desire to learn by personal financial investment as well as a commitment of over 200 hours valuable time to study the cable tv industry.

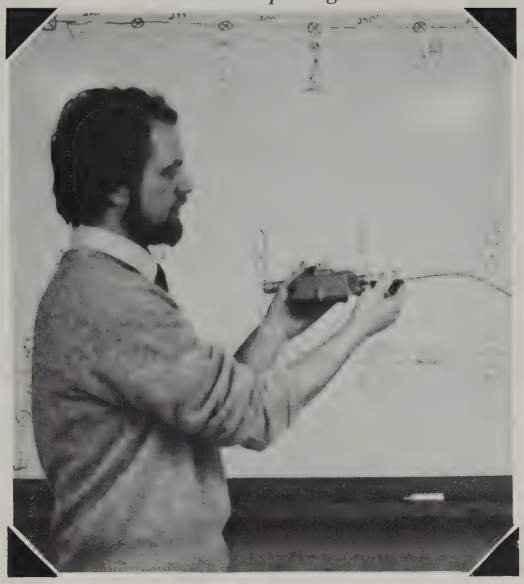
HOW WE LEARN

To be sure we accomplish both understanding and retention, all of the three main learning systems must be intergrated. We must be able to picture the steps to a well through-out completed job (visual aids). We must express the process and improve on our decisions and eliminate unnecessary steps (discussion). Finally, we must physically do the work to imprint the action into our permanent memory (hands on).

Standard Level Line Construction

. Construction Techniques

Cable Splicing



UNICOM COURSE SYNOPSIS (OUTLINE)

WEEK ONE

Orientation —

- What Do Employers Expect?
- Cable Industry Facts
- Customer Service
- Pole Climbing
- Ladder and Truck Safety
- Cable Identification

* Accent on speed and safety

WEEK TWO

- Basic Electronics for Cable TV
- Volt Ohm Meter and Signal Level Meter Use
- Loop Resistance
- System Design and Powering
- Grounding

WEEK THREE

- Basic Construction and Splicing Methods
- Construction Tools and Trailer Use
- Hands-On Construction
- Introduction to Installation

* Accent on speed and safety

WEEK FOUR

- Basic Installation Methods
- Fitting Application and Grounding
- Hands-on Installation
- Introduction to Prewires

* Accent on speed and safety

FINAL WEEK

- Prewire techniques
- Hands-on Prewire
- Customer Service
- Five Week Review

April, 1986

SOLD

ASHDOWN CABLEVISION INC.

serving 2,080 basic and 980 pay t.v. subscribers in Ashdown, Foreman and Little River County, Arkansas has been sold to

ENSTAR COMMUNICATIONS CORP.

of Atlanta, Georgia

The undersigned represented the seller in this transaction. This notice appears as a matter of record only.

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1255 23rd Street, N.W.
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Washington, D.C. 20037 202/857-2535

COMMUNICATIONS EQUITY ASSOCIATES

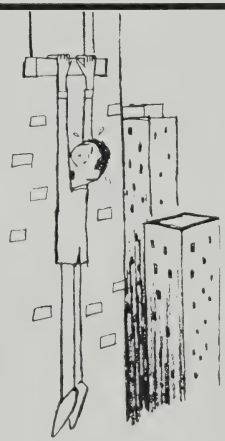
Construction Practices

Installation Skills

PROOF OF PERFORMANCE

Upon completion each student will receive a course completion certificate, and will be certified in pole climbing. (No grade of less than 90% will be accepted.) A Red Cross Instructor will also have instructed the students in First Aid and CPR, with special emphasis on pole top rescue, and the students will also receive that certification.

At UNICOM, the curriculum continously is being upgraded



HANGING ON to your old manual billing system is not very smart.

CATV 6.0 is a Billing/ Accounts Receivable System designed specifically for Cable TV operators for use on the economical TRS-80® Model 12 and multiuser Tandy 6000 under TRS-Xenix®. This system maintains subscriber accounts faster, with efficient payment verification and account updating, and provides timely management reports. All in a language YOU understand.

Call **1-803-787-7256** or write

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Hwy. 167 N. Batesville, Arkansas 72501

Pole-Top Rescue

Construction Practices

with the newest in cable industry concepts and staying abreast of the newest technology and techniques, while teaching the tried and true methods which will enable the graduates to do quality work as they enter cable televison placements.

. . . . . .

The cry from the cable operators continues to be finding qualified and trained technical people, and this unique educational program would provide an interested student the training to acquire those skills and experience necessary to make a real contribution to a cable system and its efficient operation. Aside from the $1500. tuition charge, one would need to consider housing and meals during this five-week study period; special rates are available for UNICOM students at the local Kalispell motels. Class times are 8 a.m. — 5 p.m. Monday through Friday, with an hour for lunch (a next-door restaurant provides student-priced meals for lunch). The class schedule begins every sixth week: scholarship money is available for special situations and several state cable associations are developing plans whereby they can sponsor a student. If you have more questions, contact Kip Hayes or Lynn Andrews at (406) 752-5487: and tell them you found out about the school in CATJ! □

April, 1986

SOLD

CLEF COMMUNICATIONS, INC.

serving Ash Flat, Viola and Horseshoe Bend, Arkansas
has been sold to

COMMUNITY TV CABLE CO.

of Doniphan, Missouri

The undersigned represented the seller in this transaction.
This notice appears as a matter of record only.

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Tampa, FL 33609 813/877-8844

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COMMUNICATIONS
EQUITY
ASSOCIATES

Something New

ANTENNA ICE SHIELD

Microflect's new **Antenna Ice Shields** are designed to prevent antennas damage from falling ice and are available for antennas from four feet to twelve feet in diameter. The shields are fabricated from extruded steel and steel angle and are hot-dip galvanized after factory welding. Each shield includes 200 feet of E.H.S. #7 3/8" cable, mounting brackets, and supporting hardware. Antenna ice shield mounting brackets vary for specific applications, depending on tower type, antenna's type, brand, and position on the tower.

For more information about Microflect's antenna ice shields, contact Microflect Co., Inc., P.O. Box 12985, Salem, Oregon 97309-0985, USA, (503) 363-9267, TLX 510-599-0107.

SYSTEM 10 DIGITAL ADVERTISING MACHINE: VIDEO MAGAZINE

M.G. ASSOCIATES, LTD., Atlanta, Georgia, is adding a new dimension to local ad sales with the introduction of ... SYSTEM 10 Digital Advertising Machine: Video Magazine. The cable operator can ... produce a 15 second spot in 15 minutes for 15 dollars.

The SYSTEM 10 allows the operator to cost effectively produce commercials. The SYSTEM 10 offers a choice of graphic styles and image printing to digitize photographs and videos in 33,000 distinct colors.

Since high production costs will no longer be an objection for the prospective advertiser, the ad salesperson has one less objection to overcome. And that means an **easier sale, greater sales volume** and **more revenue to the operator.**

Bring any business's ad to cable simply by shooting a still photo with an everyday 35mm camera. The SYSTEM 10 digitizes the image off the photograph and brings the print advertiser over to the cable environment with a customized ad at a moment's notice. The SYSTEM 10 features **digital frame storage** and includes a **Frame Grabber** that digitizes moving images in **one sixtieth of a second.**

The special effects are in the software so all production can be done in the office, without tying up costly production crews in the field. For cluster situations and smaller systems in particular, this

is the ideal application. The SYSTEM 10 puts **more advertisers on the air more quickly because it's as easy as taking taking a picture.**

The **inexpensive** SYSTEM 10 may be purchased, leased and/or leased/purchased.

"The SYSTEM 10 is part of our continuing plan to offer products and services to meet the ever changing needs of the cable industry in the area of local ad sales," explained Mr. Goldstein, President of M.G. Associates.

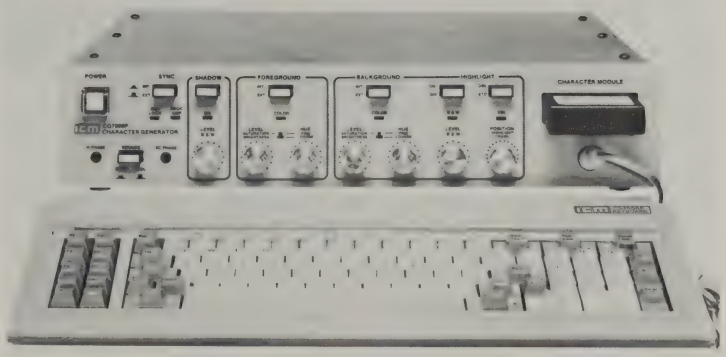
M.G. ASSOCIATES, LTD., can be contacted for a **free demonstration tape** of the SYSTEM 10.

For further information: M.G. ASSOCIATES, LTD., 1819 Peachtree Road, N.E., Suite 614, Atlanta, GA 30309, (404) 351-1103.

ICM VIDEO ANNOUNCES NEW PRODUCT

ICM Video has introduced the Model CG-7000P Color Character Generator. The company emphasized that the unit underwent extensive engineering to make simple and easy for video operators to use. The unit has very high resolution characters, and character fonts are generated by a plug-in module. The plug-in module concept permits an almost unlimited number of fonts. In addition, custom fonts, graphics and logos may be special ordered for the unit in plug-in module form.

The company also stated that the CG-7000P will generate an unlimited number of colors for the characters, and for the internally generated background. The character generator can genlock to any video source, including 3/4" and 1/2" videotape. The characters and graphics can then be keyed over the external video with a built-in keyer. The unit contains 80 pages of built-in memory. Some additional features of the CG-7000 are: Program and preview outputs, four character sizes, scrolling, auto-sequencing, drop shadow, flashing effect, and battery backup.



CG-7000P Color Character Generator

The CG-7000P was designed for videotape production, broadcast TV, cable TV, and message generation. Delivery of the unit has already begun. The CG-7000P has a suggested user net price of $1,995.00. For more information, contact ICM Video toll-free at (800) 426-9825.

Consider it done!

Dear CATJ Readers:

Some issues back, CATJ ran a satellite dish ad entitled "Don't Be Fooled" taken from the Mid-America Association newsletter. We have been asked to credit this ad production to Miguel Ewing of the Donrey Media Group. Consider it done!!!

The Impact Of Multichannel TV Sound On The Cable System Headend

BY: THOMAS R. STUTZ,
PRODUCT MANAGER
JERROLD DISTRIBUTION
SYSTEMS DIVISION
GENERAL INSTRUMENT
CORPORATION

ABSTRACT

Although the Federal Communications Commission (FCC) did not rule on a Multichannel Television Sound (MTS) standard, they did protect the Electronic Industry Association's (EIA) recommended system. As such, the FCC has created a de facto standard for the transmission and reception of MTS.

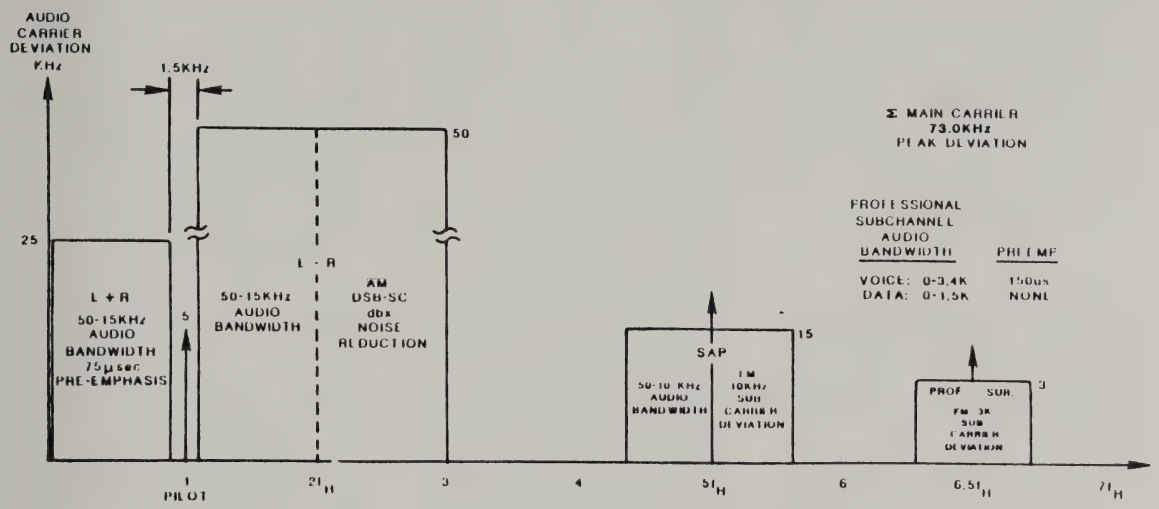
The paper summarizes the effect of the MTS de facto standard on the cable system's headend equipment. Although other cable carriage schemes are in use today to supply satellite stereo services, this paper will only consider in-band carriage of the MTS signal. No judgements will be made concerning the audio performance of the MTS signal. Also discussed will be an overview of the modifications and equipment necessary for upgrading the headend to accommodate the MTS signal.

Since the FCC recently decided to indefintely delay the decision to impose cable must-carry for MTS, no attempt will be made in this paper to anticipate any future FCC decision concerning this issue.

The History Of Multichannel Television Sound — *A Brief Chronology*

In 1961, the Federal Communications Commission (FCC) decided on and approved a single stereo transmission system for FM radio. More than two decades later, in a time when Federal intervention was being downplayed, the FCC approved the use of sub-carriers for AM stereo, but did not choose a single AM stereo radio transmission system. Rather, they allowed the marketplace to decide. On March 29, 1984, the FCC approved the expanded use of the television aural baseband for stereo, second language service, and any other broadcast or non-

THE BROADCAST TELEVISION SYSTEMS COMMITTEE (BTSC)
MULTICHANNEL TELEVISION SOUND SYSTEM



BASEBAND FREQUENCY
F_H=HORIZONTAL SCANNING FREQUENCY (15.734 KHz)

FIGURE 1

broadcast purpose and also, like AM stereo radio, did not decide on a particular transmission system. To avoid a repeat of the present AM stereo radio controversy, however, the FCC protected the EIA's recommeded MTS system and, in effect, created a de facto standard.

All problems solved, right? Not quite. During the decades which followed FM stereo radio, an entire cable television industry was developing. By 1984, more than 30 million subscribers were being served by over 7000 cable systems throughout the nation. These systems employ various generations of equipment and technology. Many are small 12 channel systems with limited bandwidth and outdated technology, while others have excess capacity and utilize state-of-the-art technology. Regardless of the available bandwidth or technology employed, these systems will have to deal with the issue of MTS. The driving forces behind cable system implementation of MTS could be any or all of the following:

1) A future must-carry mandate from the FCC.
2) Subscriber demand.
3) Revenue generation.
4) Franchise requirement.

Must-Carry Mandate

The decision regarding whether cable systems should be forced to carry the MTS signal, and in what format, was indefinitely delayed recently by the FCC. The cable industry had strongly argued against must-carry on the grounds of system incompatibility and resultant high cost to upgrade. The broadcast industry, on the other hand, had argued that copyright laws prohibit the modification of protected programs and, therefore, cable systems should be required to supply the MTS signal to the subscriber. The FCC compromised by directing its Mass Media Bureau (MMB) to annually monitor market penetration of

MTS HEADEND IMPACT

HEADEND PROCESSING METHOD	SOUND TRAP BANDWIDTH MODIFICATION	SOUND IF BANDWIDTH MODIFICATION	AUDIO MODULATION BANDWIDTH MODIFICATION	AUDIO DISCRIMINATOR BANDWIDTH MODIFICATION	PRE-EMPHASIS DISABLE	DE-EMPHASIS DISABLE
STRIP AMPLIFIER	X	N/A	N/A	N/A	N/A	N/A
BASEBAND DEMODULATOR-MODULATOR	X (Demod. Only)	X	X (Mod. Only)	X (Demod. Only)	X (Mod. Only)	X (Demod. Only)
HETERODYNE PROCESSOR	X	X	N/A	N/A	N/A	N/A

FIGURE 2

MTS broadcasts and MTS compatible receivers. The MMB was also directed to monitor the voluntary implementation of MTS by cable systems. In the meantime, the must-carry issue will remain open until such time the FCC solicits a new round of comments on the subject. Cable operators should, therefore, not overlook the possibility of a future must-carry mandate from the FCC.

Subscriber Demand

Most TV receiver manufacturers have recently announced the availability of multichannel sets. Some consumer electronics manufacturers have also announced availability of MTS adapters to convert monophonic sets to stereo. These announcements have undoubtedly created a consumer awareness of MTS. With this awareness comes unrealistic expectations from the cable subscriber that they will soon be receiving MTS via cable. Subscriber demand for MTS, whether founded or unfounded, will be a factor which cannot be overlooked by the industry.

Revenue Generation

MTS consumer awareness and resultant demand has created an opportunity for operators to generate additional revenue. Broadcasters are well aware that advertising revenues can be increased when native language programming is accompanied by native language commercials. Cable operators serving non-English speaking communities, in the same way could increase their advertising revenues by utilizing the second language program of the MTS standard. Major networks have already test-marketed bilingual broadcasts in non-English speaking markets and have had excellent results.

Those ignored stereo satellite services could also be offered in or out-of-band for additional revenue. For the consumer not sold on cable, these expanded audio services could help add subscribers and increase penetration.

Franchise Requirement

Although program material with bilingual audio is limited in its availability at present, major city systems, in the future, may be required by franchising authorities to carry second language service for non-English speaking residents. The transmission of MTS will proliferate the availability of bilingual programming as broadcasters seek to expand their market penetration and advertising revenues.

The Multichannel Television Sound System

The objective of the EIA's Broadcast Television Systems Committee (BTSC) was to arrive at a single multichannel television sound transmission standard which would incorporate a compatible main channel, a full quality stereo sub-channel, a lesser quality seperate audio program (SAP) subchannel and the potential for a professional sub-channel for telemetry purposes. Following initial testing, it was determined that some form of noise reduction would be necessary to compensate for the lower signal-to-noise ratio

associated with the wider audio bandwidth of the MTS signal.

Of the three proposed transmission systems considered by the EIA, a single system was recommended which met the above objectives. As illustrated in Figure 1, the recommended BTSC MTS system consists of a main channel containing both left and right audio signals. The main channel pre-emphasis, bandwidth and audio deviation are identical to the current monophonic standard, i.e. 75 usec, 15 KHz and ±25 KHz respectively, and is therefore fully compatible with non-stereo TV receivers.

To separate the left and right audio signals, the stereo sub-channel contains the difference of left and right and has an effective bandwidth of 15 KHz with a sound carrier deviation of ±50 KHz. The combined audio deviation of the main and stereo sub-channel is ±50 KHz, since by definition, both signals cannot be maximum at the same time. The stereo sub-carrier uses double sideband suppressed carrier amplitude modulation with the sub-carrier locked to twice the horizontal scanning frequency. Dbx companding or noise reduction is added to this channel to improve the signal-to-noise ratio. The companding process also provides an improvement to the usual pre-emphasis technique for the stereo sub-channel. A pilot signal at the horizontal scanning frequency, causing a deviation of ±5 KHz, provides the necessary reference signal to control the stereo decoder in the TV receiver.

The SAP sub-carrier is locked at 5 times the horizontal scanning frequency and is frequency modulated with a bandwidth of 10 KHz and audio deviation of ±15 KHz. To boost the signal to noise ratio of this carrier, dbx companding is also incorporated and provides an improvement to the usual pre-emphasis technique. Finally, the professional sub-channel has its sub-carrier located at 6.5 times the horizontal scanning frequency and has a bandwidth of 1.5 KHz to 3.4 KHz (depending on the type of modulating signal) and audio deviation of ±3 KHz.

Impact Of The BTSC Multichannel Television Sound System On The Cable System Headend

The cable system headend has experienced many technological changes over the last 25 years. From the earliest strip amplifier processing, utilizing vacuum tubes, to today's surface acoustical wave (SAW) filter processing utilizing integrated circuitry, the headend has evolved to meet the increased performance and bandwidth requirements of today's sophisticated systems. Because of the various technologies of headend systems in operation today, the BTSC MTS system will impact each in different ways. Three types of off-air headend processing are in varying use today: strip amplifier processors, demodulator-modulator baseband processing and heterodyne processors. Figure 2 summarizes the impact of the MTS signal on each type of headend processing method.

Strip Amplifier Processors

Strip amplifier processors are typically associated with small channel systems and over the years have gradually been replaced with heterodyne processors. The expanded bandwidth of the BTSC MTS system may not pass the sound trap of the strip amplifier processor without distortion, and thus, only the main channel (L + R) signal would be unaffected. Depending on the particular design of the strip amplifier processor, modification to the sound trap circuit may be possible so that both the main channel and the stereo sub-channel would have acceptable distortion. Most likely it would not be possible to pass the SAP sub-channel. However, caution should be given to the effects that widening the sound trap will have on the video passband. Widening the sound trap will decrease the video passband. It is recommended that the strip amplifier processor manufacturer be consulted to determine if the design will support a modification for MTS and to what extent the modification will support MTS, i.e.: main channel, stereo sub-channel and SAP or just the main channel and stereo sub-channel.

Demodulator-Modulator Baseband Processing

This type of processing utilizes a demodulator to convert the received off-air signal to an intermediate frequency (IF) and then to baseband. The baseband signal

MULTICHANNEL TELEVISION SOUND (MTS) HEADEND SYSTEM

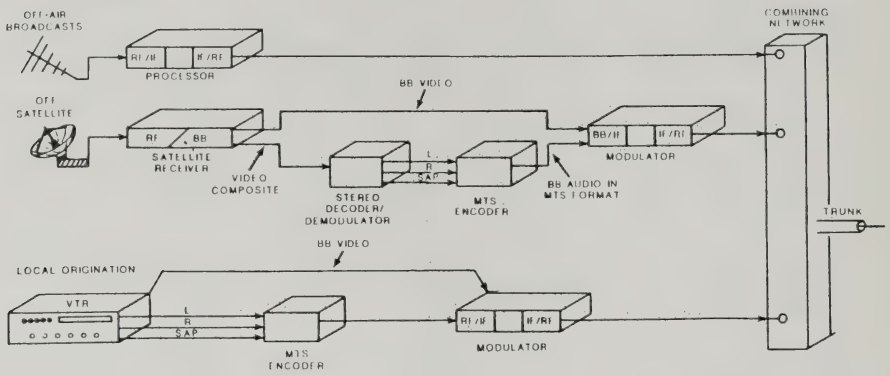


FIGURE 3

is then fed to a modulator which remodulates the signal to the desired cable channel frequency. The demodulator incorporates an IF sound trap network which is designed to remove any residual IF sound from the IF video signal. This trap may not handle the wider bandwidth MTS signal and, therefore, may distort the video. De-emphasis must also be disabled to eliminate incompatibility with the stereo sub-channel and SAP. The audio detector and baseband circuits must also be checked for sufficient bandwidth for compatibility with the MTS signal.

Concerning the modulator, the increased bandwidth of the MTS signal will require a modification to the audio modulation circuitry. The Jerrold Commander IV modulator, model C4MS, for example, has been modified to increase the baseband audio bandwidth to accommodate the MTS signal. The pre-emphasis was also made operator selectable so it could be disabled when modulating with an MTS signal. Both the audio bandwidth and pre-emphasis modifications on the Jerrold C4MS modulator were made to the audio modulator module (CAM). This module is a plug-in type and can be quickly and easily replaced in the field with a MTS compatible version (CAMS) for Commander III and IV modulators.

Heterodyne Processors

The heterodyne processor is the workhorse of headend off-air signal processing. Since demodulated baseband video and audio signals are not typically utilized in the headend, the heterodyne processor can process and channel convert an off-air signal more cost effectively than a demodulator-modulator system. The heterodyne processor heterodynes or mixes the off-air signal with a signal from the local crystal controlled oscillator to produce a stable IF. The IF is then amplified and heterodyned back to a particular cable channel frequency. As in the case of the demodulator, the bandpass of the sound trap must be increased to accommodate the wider bandwidth MTS signal. The sound trap bandpass on the Jerrold Commander IV processor, model C4P, for example, was increased to accommodate the MTS signal. It is important to note that subjective testing has shown that with accurate alignment all generations of Jerrold Commander series processors (CI through CIV) can be used to process the MTS main channel and stereo sub-channel signals with minimal impact on performance.

When the sound trap is widened to accommodate the MTS signal, the video IF passband is slightly decreased. In the case of the Jerrold Commander IV processor, the overall video IF bandwidth was reduced from approximately 4.2 MHz to 4.0 MHz relative to the picture carrier. This has been found to have no effect on subjective resolution, even on "full band-

width" type receivers. For full compatibility with the MTS signal, Jerrold Commander III and IV processors can be field upgraded by replacing the IF amplifier module (CIA) with an MTS compatible module (CIAS). This module is located in the center slide-out drawer of the processor and replacement can be easily accomplished without removing the unit from the cabinet or rack.

The MTS Compatible Headend System

Figure 3 illustrates a typical headend system designed to process the MTS signal in-band. Off-air MTS signals are processed by a modified heterodyne processor. Processing satellite signals in the MTS format will be more difficult than processing off-air MTS broadcasts. Since stereo satellite services utilize various stereo transmission formats and are not expected to be standardizing in the near future, a compatible stereo decoder/demodulator will be necessary to provide baseband audio inputs to a MTS encoder. The MTS encoder generates the MTS baseband audio signal and would incorporate the necessary dbx companding and pre-emphasis. The MTS baseband audio signal is then fed to the audio input of the modified modulator and up-converted to the particular cable channel frequency. Local origination baseband audio inputs would be directly connected to the MTS encoder and then to the modified modulator. All signals would then be combined, as usual, before distribution.

Conclusions

Regardless of any future FCC decision concerning MTS must-carry for cable systems, market demand will be a driving force for determination of the cost versus technical feasibility and revenue potential of MTS implementation. With almost 1600 U.S. TV stations, including permittees, on record in 1984 and preliminary industry surveys indicating that more than 40% are planning to add MTS, means that more than 600 geographic areas will be soon served by MTS broadcasts. Taking a conservative average of 5 off-air channels carried per cable system, and cutting in half the industry surveys for broadcasters adding MTS, yields the fact that at least 1 must-carry off-air channel in every cable system will be broadcast soon in the MTS format. How soon is unknown. However, it cannot be overlooked that 1985 will begin with at least 15 TV stations regularly broadcasting MTS. These stations will ultimately affect at least 1 cable system in 20 or over 350 systems at the start of 1985.

As broadcasters add MTS capability and promote it accordingly, the cable subscriber will become very aware of MTS program availability and the availability of MTS TV receivers. It is expected that over 2 million MTS capable TV receivers will be sold in 1985. Some receiver manufacturers have even announced that MTS decoders may be standard in all receivers within 2 years. This will mean that the same questions that operators had to face when subscribers asked why their new "cable-ready" set could not give them premium services at basic rates or why their TV remote control was rendered useless when they added cable must again be faced when their subscriber asks why his $1,000,000 stereo TV set will not receive the stereo off-air broadcast the manufacturer promised. Even more serious will be the problem of retaining the subscriber when he reconnects his off-air antenna and enjoys the "free" stereo broadcast. It is time that cable operators look at ways to turn the MTS "problem" into an "opportunity" for additional revenue and/or increased subscriber penetration. □

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SOLD

OZARK SUMMIT CABLE, INC.

SERVING 1,400 BASIC SUBSCRIBERS IN MARSHFIELD, STRAFFORD AND FORSYTH, MISSOURI HAS BEEN SOLD TO

C4 MEDIA CORPORATION - Vienna, Virginia

THE UNDERSIGNED REPRESENTED THE SELLER

Communication Resources Unlimited, Inc.

6539 E. 31st St. • Tulsa, OK 74145

918-665-8484

TOM BELCHER, President

CATA '86

The Consumer Connection

RENO, NEV. JULY 15-17, 1986

A "FULL HOUSE" OF INFORMATIONAL PANELS FOR CABLE OPERATING PERSONNEL!

We have always had a very basic problem with the CATA Show. There are too many information-packed panels and not enough time to let everyone go to each individual panel! This year is the toughest one yet. We suggest that you be sure to have at least two top management folks and a technician from each system come to the show, that is the only way to get all the information first hand! As you will see from the outline of the panels, we are not kidding! Of course all panels will be taped, and the tapes will be available for purchase, but that is not quite the same as being there.

As most folks know by now, the focus of the CATA Show has always been the seminars and panels. Of course we have an exhibit floor, and there always is lots of activity there too, but the heart of the CATA Show is the informal information flow that we get going among the "experts" in the cable industry — the operational folks on the "front lines" of cable. As you will see from the following outline of the panels scheduled for this year, we have plenty of the veterans to get the discussions started during the panels — the result of getting those discussions started usually lasts well into the night!

Day 1

TUESDAY, JULY 15th

Starting things off this year, as has now become our tradition, is an "opening panel" in a "Donahue format" with CATA President, Steve Effros, roaming the floor with a microphone to assure that CATA Show attendees get into the act right from the start with their questions about the relationship between cable operators and programmers. The panel is tentatively entitled **"What do we want to be when we grow up?"** It will explore the entire question of whether the cable industry really wants to or needs to go in the direction of developing our own programming channel — do we want to fund the "4th network"? Or are we really a distribution system that will provide all the programming anyone could ever want from any source? With us to the explore that question, as well as the issue of bulk discounting and the whole present relationship between operators and programmers, will be Peter Barton of TCI (TCI is, of course, leading the charge for a special "cable channel"); John Karl, who heads Buckeye Cablevision in Toledo, Ohio, and has some doubt about the plans being put forward by the largest MSO's; Mike Pandzik, who leads the National Cable Television Co-op, which is trying to get a better purchasing position for the smaller operators; and several others who are yet to be announced. It should be a fascinating opener!

Following the opening session there will be two panels running from 10:45 to Noon on Tuesday: **"The Image Makers — Public and Government Relations: Cable's Public Image"**, and **"Acquisitions and Sales — Protecting yourself on either side of the Table".** Here is where you have to start making those tough decisions. If you are anywhere close to the time of renewing your system or changing your rates, then the "Image Makers" session is a must! On the other hand, if you are thinking of sitting down on either side of the acquisition/sale table anytime soon we are going to have a stellar panel of experts on how to do it and what to watch out for. We'll give you all the panelists names and titles next issue — the important thing to know now is the type of information you will have available to you this year at CATA '86 — and we can really only describe it with one word — invaluable!

After a lunch on your own on Tuesday, you will be offered two panels from 1:30 to 2:45, both having to do with making money, but in very different ways. **"Customer Relations and Retention — Pricing Policies in a Deregulated Market"** will look at the various aspects of getting and keeping customers, and especially how you do that and what your strategies might be once rate regulation is removed January, 1987. There are lots of pudits out there right now who are betting that a lot of operators will make some very bad mistakes in January and possibly "poison the well" for cable. Don't you be one of them! At the same time, another panel of experts will be filling CATA operators in on **"The HTVRO Business — IS IT?"** Is there really a viable business out there for cable operators? What is the latest on scrambling? What are the experiences to date of HBO and Showtime? What's the likely trend? And most importantly, is this a business for you? Come and find out from operators, small and large, who have tried it.

Speaking of "trying it", have you attempted to hook up a complex stereo VCR rig to your system yet? Do you have any idea how frustrated our customers are getting about this? Well here's your chance to review the latest technological answers to that problem in a panel from 3:00 to 4:15 on **"The Consumer Connection - VCR Interface & Stereo Sound".** You will want both a "marketing type" and an "engineering type" to attend this session! At the same time, for those of you who negotiate the programming contracts, we are going to have a repeat of the very popular session from last year's show on the nitty gritty of **"Program Contracts and Co-op Buying".** If you missed it last year, this one is a "must"! ►

Tuesday evening will start early with a complimentary Exhibitors' Reception at the opening of the Exhibit Hall from 5:00 to 7:00. Then you are on your own to attend the MGM Grand (now called the Bally's Grand — since it was just bought by Bally) dinner and stage show if that's your preference. Tickets can be purchased at the door — or you can make reservations up to one week in advance by calling 800/648-3568. Seating for dinner starts at 5:30 and goes to 7:00. The show starts at 7:30. The cost runs roughly $25 per person, depending on what you eat and drink, and the show is said to be spectacular! It's called "Hello Hollywood Hello". If you don't want dinner you can go to the "late" show, starting at 11:30. Seating begins at 10:30 and the show comes with 3 cocktails for $18.50. Beware, however, on all these prices there is a **16%** (yes, you read that right!) **tax!** Of course, we expect several hospitality suites will also be active if you choose not to see the show, and there is always the Casino to take your mind off business for a little break before the meetings of ...

Day 2
WEDNESDAY, JULY 16th

Starting right off will be the traditional **"Washington Update"** from 8:00 to 9:00 — if you need any convincing that you had better attend this one, take a look at the latest news on what is happening in Washington and you won't have any questions! Then we have exclusive Exhibit Hall hours from 9:00 to 1:30. Lunch is on your own — you will be able to buy it right on the Exhibit Floor so you don't have to take time out from all the contracts we hope you will be signing with the CATA Associate members at the Show — let's remember, they support us, and we should support them! Be sure to make your purchases **AT THE SHOW!** Bring your checkbook.

From 2:00 to 3:15 you can either explore the **"Pay per view Dream — or is it Reality"**, or you can get into a detailed discussion with the experts on **"Amplifier Basics"** — there is a growing concern among these experts that many technicians are "adjusting" amplifiers without the slightest idea of what they are really doing to the system as a whole. One theory that will be explored is that amplifiers should **NEVER** be "adjusted" once they have been properly installed.

"Addressability - Is it Worth It? The Financial and Technical sides of Theft of Service and Pay Per View", and **"New Revenue Sources - New Subscriber Opportunities"** will round out Day 2 panel activities.

Again, the evening will be on your own, but we already know that there will be one reception (thanks to HBO) and we expect there will be more — we'll list them all in the program if they let us know in time.

Day 3
THURSDAY, JULY 17th

At this point we figure you will need it, so CATA will be throwing a complimentary "Bloody Mary" reception to start off the day and give you a last chance to see the Exhibit Hall. That will lead directly into the CATA BRUNCH at which we will have our usual hijinx as well as one of the cleverest "old timers" in the business addressing us — Dick Loftus of Trident Communications.

Immediately following the Brunch, we will hold the CATA Annual Membership Meeting and the Show will then adjourn at around noon. We are arranging for a late check-out for all CATA attendees so there will be no rush.

Well, that's it! Do you think you will have enough to do? If not, and you or your spouse is interested in additional diversion, there are about 6 different tours that you can sign up for right in the hotel at the SAFARI TOUR desk. The tours run every day and go to places like Virginia City and Lake Tahoe. Prices run from $15 to $25 and usually

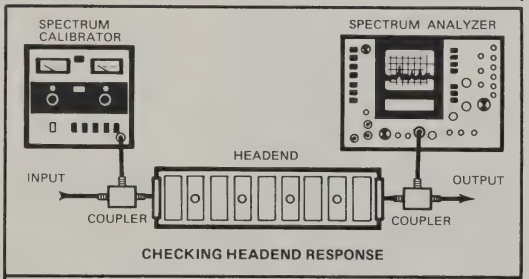
include lunch. There are all-day excursions, half-day, and everything else you could possibly want. If you want information in advance about the tours, call the hotel at 702/789-2000 and ask for the SAFARI TOUR desk. They recommend you make reservations the day before you want to go. They will not take reservations by phone, and you can usually get on a tour just by showing up before it leaves (all but one leave at the civil hour of 10 am).

Just a few final notes for those of you who are not familiar with the CATA Show. This is an **INFORMAL** gathering! The idea is to exchange information among friends. A "no tie" policy promotes that feeling. — Come join in the information and the fun — share your knowledge with your colleagues — see you in RENO! □

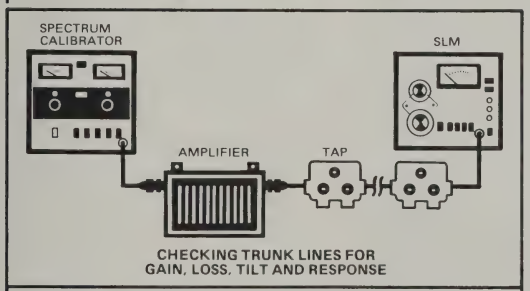
US PATENT #3731186

Checking response flatness is easy with Sadelco's SC 450 Spectrum Calibrator

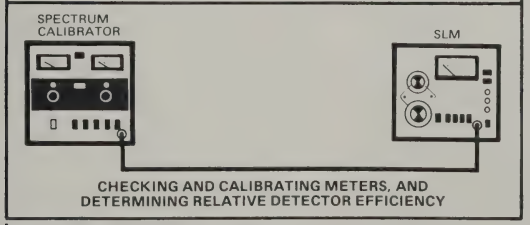
¼ dB ACCURACY
4.5-450 MHZ
MHz Ratio: 100 to 1



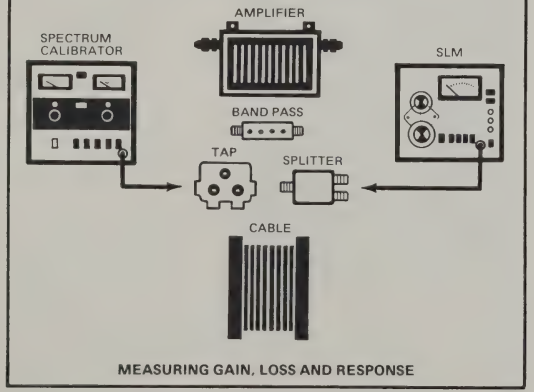
CHECKING HEADEND RESPONSE



CHECKING TRUNK LINES FOR GAIN, LOSS, TILT AND RESPONSE



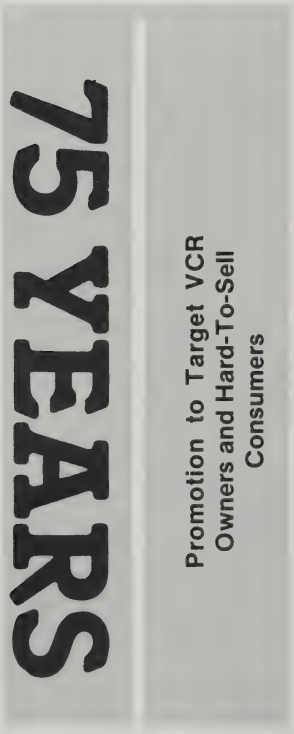
CHECKING AND CALIBRATING METERS, AND DETERMINING RELATIVE DETECTOR EFFICIENCY



MEASURING GAIN, LOSS AND RESPONSE

Sadelco, Inc. 75 West Forest Avenue, Englewood, New Jersey 07631 201•569-3323
General representative for Europe: Catec AG Habsburgerstr 22, 6003, Luzern, Tel. 041-559275, Telex: FICOM 78168

THE MOVIE CHANNEL'S "SALUTE TO 75 YEARS OF HOLLYWOOD," PAY-TELEVISION'S FIRST VCR-PROGRAMMING EVENT, WILL BE THEME FOR AUGUST/SEPTEMBER SUBSCRIBER ACQUISITION PROMOTION



THE MOVIE CHANNEL's second major subscriber acquisition promotion of the year will be centered around THE MOVIE CHANNEL's August/September "Salute to 75 Years of Hollywood," pay-television's first VCR-programming event, it was announced by Josh Sapan, Senior Vice President of Marketing & Creative Services, SHOWTIME/THE MOVIE CHANNEL, INC.

Mr. Sapan commented, "The 'Salute to 75 Years of Hollywood' promotion is designed to reflect THE MOVIE CHANNEL's new positioning as the perfect VCR accessory and to highlight the changes that make THE MOVIE CHANNEL more differentiated. The promotion targets exactly those consumer groups for whom THE MOVIE CHANNEL is uniquely suited to attract — specifically, the VCR owner plus some of the more resistant pay cable market segments, including ex-pay subscribers, basic onlys, and single pay subscribers. We're extremely excited to be presenting the cable operator with a promotion that will truly breathe life into The 'new' Movie Channel and make the various changes meaningful to their subscribers."

In 1911, Hollywood's first studio was opened by the Centaur Company. According to historians, Hollywood beat out New Jersey, Florida, Cuba and Brooklyn as possible locations for these early filmmakers. THE MOVIE CHANNEL will pay tribute to this anniversary in August and September with a celebration of films representing Hollywood's most popular genres throughout its 75-year history. Included in these special movie groupings, which are perfect for home taping, will be the exclusive national pay-television premiere of "The Emerald Forest," "The Sure Thing" and "Summer Rental." These films will be uniquely programmed as part of film festivals, movie marathons every weekend in August, double features and star salutes. Many of the films being presented during the programming event will also play on THE MOVIE CHANNEL's new VCR Theater, which offers a different movie every night at 3:00 a.m. EST. During the "Salute to 75 Years of Hollywood, THE MOVIE CHANNEL will also explore the history of Hollywood and take a special inside look at the Hollywood glamour that has captured our imaginations for generations.

While current subscribers to THE MOVIE CHANNEL are enjoying this special programming, THE MOVIE CHANNEL's August/September subscriber acquisition promotion will be in progress. In support of the "Salute to 75 Years of Hollywood" promotion, THE MOVIE CHANNEL will provide affiliates with telemarketing campaigns, point of

purchase displays, posters, billstuffers, postcards, and outdoor billboards, and will conduct a national advertising campaign through cable guides and local market media. THE MOVIE CHANNEL will also co-op with qualified affiliates the cost of a premium offer of two blank VCR tapes. Affiliates are encouraged to offer a free month of THE MOVIE CHANNEL, free installation, or free VCR hook-up as alternative subscription incentives.

THE MOVIE CHANNEL's "Salute to 75 Years of Hollywood" will be communicated to affiliates through a trade advertising campaign and in the August/September marketing kit. Included in the kit are customizable print ad slicks, direct mail pieces, press releases and order forms for the August/September ad reel of customizable 30, 60 and 90 second TV and radio spots. Order forms for the additional support materials are also included in the kit.

"The 'Salute to 75 Years of Hollywood' is another prime example of SHOWTIME/THE MOVIE CHANNEL's trademark promotional formula," Mr. Sapan said. "Our approach calls for thematic, program-related promotions which break through the clutter of the marketplace and allow consumers to make meaningful distinctions between pay services. Our promotions are characterized by exclusive feature and continuity programming elements, a valuable premium giveway, and strong marketing support materials, all tied to one easily definable, specific promotional theme. It is only through, consistent and integrated communication that THE MOVIE CHANNEL's unique identity will be clearly perceived, and valued, by the consumer."

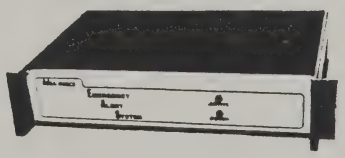
Nora Ryan, Director of Marketing for THE MOVIE CHANNEL, commented "All affiliates of THE MOVIE CHANNEL have already received introductory kits for THE MOVIE CHANNEL's 'Salute to 75 Years of Hollywood.' Although we supply all the tools necessary to implement the promotion, a successful campaign does require planning, and we encourage cable operators to get involved early."

Ms. Ryan added, "Some of the greatest success stories from past promotions involve cable operators in contiguous communities working together on the promotion, and we encourage operators to consider joining forces on the 'Salute to 75 Years of Hollywood.' "

* * * * *

75 YEARS

Introducing The
Emergency Alert System



★ Emergency access to all television channels, including midband and superband. 54 channels.
★ The perfect way to improve community relations and provide an invaluable service.
★ A great way to make your system, large or small, more valuable to your city and subscriber.
★ Easy installation and operation.
★ Standard 19" Rack Mounting.
★ Compatible with all headends.
★ 14 Day Delivery.
★ Full One Year Warranty.
★ **54 channels for under $3,000.00**
★ 12 channel units also available.

From

IDEA/ONICS

Box 224 Mayville, ND 58257 701-786-3904

ALPHA 1000 UNINTERRUPTIBLE POWER SYSTEM

ALPHA 1000

NEW PRODUCT RELEASE

Alpha Technologies announces the new Alpha 1000 uniterruptible power source. The 1000VA backup power source will keep microcomputers, small minies, telephone PABX's or other power sensitive electronic equipment operating during all types of power failures or brownouts. The Alpha 1000 has many new advances over other UPS systems currently available, such as:

- No accidental shutting off of the Alpha 1000 because there is no on/off switch,
- Two full hours of backup time is standard with the Alpha 1000, and 4 hours with easily added optional battery pack, outstanding output voltage regulation and powerline noise suppression,
- Automatic periodic self-testing, of standby operation and batteries,
- Remote status and alarm monitoring,

In addition of the advances the Alpha 1000 has these standard features:

- Complete overload, short circuit and transient protection,
- Fully sealed, long life internal batteries require no maintenance,
- Synchronized in phase transfer to and from inverter.

The suggested retail list price for the Alpha 1000 (including batteries) is $2600.00 dealer inquiries are welcome.

For more information please call: Garett Hennigan (206) 647-2360.

SPECIFICATIONS FOR ALPHA-1000

	ALPHA-1000	ALPHA-1000 L*	ALPHA-1000 E	ALPHA-1000 EL*
BACK-UP TIME (25 °C)				
½ Load	4 Hrs	10 Hrs	4 Hrs	10 Hrs
¾ Load	3 Hrs	7 Hrs	3 Hrs	7 Hrs
Full Load	2 Hrs	5 Hrs	2 Hrs	5 Hrs
INPUT				
Voltage	117VAC ± 15%	117VAC ± 15%	220/240 VAC ± 15%	220/240 VAC ± 15%
Frequency	60 Hz ± 1%	60 Hz ± 1%	50Hz ± 1%	50Hz ± 1%
Max. Current	15 A	15 A	7.5 A	7.5 A
OUTPUT POWER				
	800W	800W	800W	800W
Voltage	1000VA @ .8 P.F 120/115VAC	1000VA @ .8 P.F 120/115VAC	1000VA @ .8 P.F 240/220VAC	1000VA @ .8 P.F 240/220VAC
Current	8.3A @ .8 P.F	8.3A @ .8 P.F	4.1A @ .8 P.F	4.1A @ .8 P.F
Regulation	±3%	±3%	±3%	±3%

EXTERNAL

2 Duplex Outlets
International Line Cord Connector
Inverter On - Indicator Light
Line On - Indicator Light
DIN Connector for Remote Status and Alarm Indication

INTERNAL

Test/Reset Push Button
Thermal Breakers for Battery and Output Overload
Input Fuse 15A Slo Blo

BATTERY INPUT (36VDC Nominal) Three 12V, 80AH Lead Acid Gelled Electrolyte Batteries, or Equivalent

BATTERY LOW VOLTAGE CUTOUT	31.5VDC (Adjustable)
CHARGE CURRENT	10A Maximum
FLOAT CHARGE	40.8VDC @ 25°C (Adjustable)
EQUALIZE CHARGE	41.4VDC @ 25°C (Adjustable)
RECHARGE TIME	10-12 Hrs. Typical @ 25°C
CHARGER TEMP. COMPENSATION	Remote Sensing Optional
TRANSFER TIME	No Output Interruption
INVERTER STABILITY	± 0.5%
EFFICIENCY	Normal Mode 85% or Better at Full Load
OPERATING TEMPERATURE RANGE	–20°C (–4°F) to +50°C (+122°F)
FINISH	Beige Pebble Semi Gloss Powder Paint
DIMENSIONS	27.75" (705mm) H x 25.75" (654mm) W x 15.25" (387mm) D
WEIGHT (Incl. Batteries)	318 lbs. (144kg)
***OPTION — L**	Additional Battery Enclosure c/w 3 Batteries and Connecting Cables

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

BELDEN 8281 NOW AVAILABLE IN SIX NEW JACKET COLORS

Beldon Electronic Wire and Cable, Richmond, Indiana, features six new polyethylene jacket colors in their 8281, 75-ohm precision video coaxial cable. In addition to the black outer jacket, red, yellow, green, light blue, white, and orange jackets are offered to provide easy color coding for channel identification.

Cable 8281 is designed to achieve tight tolerances for excellent return loss performance, and is considered ideal for indoor use. Most often selected for broadcast applications, this cable is available in 500- and 1,000-ft. putups. The precision coaxial cable has 20 AWG solid bare copper wire, with a double #34 tinned copper braid, yielding 96 percent shield coverage each. It is typically used for video signal transmission in color and monochrome TV studios, and is 100 percent sweep tested.

For more details on cable 8281, featuring all new jacket colors, contact Pat Mikesell, Communications Specialist, Beldon Electronic Wire and Cable, P.O. Box 1980, Richmond, IN 47375. Phone: 317-983-5200.

CABLE 8281

CLIFTON GARDINER & ASSOCIATES, INC. ANNOUNCES STAFF ORGANIZATION

Clifton Gardiner, President of Clifton Gardiner & Associates, Inc. of Golden, CO, communication brokers to the cable television industry, is pleased to announce the following staff organization.

Wally Briscoe, Associate, will serve clients in the 11 state region of Southeast including Texas and Oklahoma. Wally joins Gardiner & Associates from Donley International, an electronics distributor, where he served as Vice President of Sales and Marketing. A 22 year cable industry veteran, Wally has also served as Executive Vice President of Gardiner Communications Corporation and in senior management of the NCTA for 14 years.

Serving the Central Region as an Associate will be B.J. Lipari formerly the owner of Beston Electronics, a manufacturer of computer based electronic equipment for the broadcast and cable industries. B.J. is also an experienced banking and commercial real estate professional.

Charles E. Mills, formerly the ESPN Regional Affiliate Marketing Manager for the Rocky Mountain region, has been appointed As-

sociate serving the Northeastern Region. Charlie's additional experience in cable television includes service as a board member of the Colorado and Georgia Cable Television Associations and National Sales Manager for Eastern Microwave.

New to the organization are Rex R. Miller and Judith A. Carroll. Rex a 26 year veteran as an owner and manager in the broadcast industry has been named an Associate will serve clients in the 11 state Western Region. While Judie Carroll, Director of Communications, will direct the production of all communication materials and research. Prior to joining Clifton Gardiner & Associates, Judie, a nine year cable veteran, was Director of Corporate Development of Warner Amex Cable. She also served as a marketing manager at Showtime and TCI and recently served as the president of the New York Chapter of Women in Cable. •

HIGHPASS FILTER FOR CABLE RETURN LINE

Model 5184 highpass filter passes 10-300 MHz and rejects DC-8 MHz. It prevents unwanted signals from travelling on the return line in dual cable systems while allowing the rest of the band to pass.

Insertion loss is 2 db maximum (10-300 MHz) and rejection is 40 db minimum (DC-8 MHz). Impedance is 75 ohms. It comes in a case 1" x 2" x 6" with type F connectors. The cover has flanges with holes for indoor mounting.

Price is $95 and delivery is two weeks. For more information contact Jean Dickinson at Microwave Filter Company, Inc., 6743 Kinne Street, East Syracuse, New York 13057. Call toll free 1 (800) 448-1666 or collect (NY/HI/AK/ Canadian residents) 315-437-3953.

Model 5184

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PANASONIC INTRODUCES FEATURE ENHANCED CABLE CONVERTER

Panasonic Industrial Company introduced the new TZ-PC120 cable converter at the National Cable Television Association trade show. The unit offers features designed for added subscriber convenience.

The TZ-PC120 converter is an enhanced version of Panasonic's TZ-PC110 converter. One of the major improvements of the new product is greater channel capacity — 68 versus 57.

In addition, all 68 channels can be programmed in the favorite channel memory, if so desired. Another standard feature on the TZ-PC120 is the last channel recall.

An optional feature on the new converter is an improved parental control device. With the TZ-PC120, parents can selectively program

the channels their children are not allowed to watch. To insure the channels remain "locked-out," a padlock can be attached to the switch which controls this function on the back of the unit.

Model TZ-PC120 Cable Converter

RISER-BOND TO PARTICIPATE IN MATCHMAKER BENELUX 86, JUNE 8-13, 1986

Riser-Bond Instruments, an Aurora, Nebraska based electronic test equipment manufacturer has been selected as one of only twenty-two companies nationwide to be a participant in Matchmaker Benelux 86, to be held June 8-13, 1986.

Matchmaker Benelux 86 is a U.S. Department of Commerce trade delegation organized in cooperation with the U.S. Small Business Administration. The participating companies were selected based on the export potential of their products or services. The trade delegation will travel to the countries of Luxemburg, Belgium, and Holland and will be promoting U.S. "High Tech" goods and services.

Riser-Bond Instruments will be demonstrating their latest test instrument, the Model 2901B Digital Time Domain Reflectometer, Cable Fault Locator.

Riser-Bond Instruments was chosen last year as one of only fifty companies who participated in the 1985 Matchmaker conference in London, England. Riser-Bond Instruments is the only company in the nation to have been selected two years in a row.

Additional information:

Riser-Bond Instruments was established in 1981. The company grew out of the need for simple and reliable, yet sophisticated test equipment for the cable television industry. The company manufactures electronic test equipment specializing in "High Tech Simplicity". The company is also involved in the development of specialized test equipment for other manufacturers. Instruments are sold directly, and through a nation-wide network of sales representatives and distributors. Instruments are also sold to many foreign countries. Riser-Bond Instruments is located at 505 16th Street in Aurora, Nebraska.

Because of the diversity and flexibility of the test equipment, literally hundreds of industries can use Riser-Bond products. Cable television, telephone, two-way radio, railroads, and computer companies to name a few.

Robert Kerrey, Governor for the State of Nebraska, congratulates Riser-Bond Instruments President, Marshall Borchert and Director of Sales and Marketing, Walter Campbell on the companies selection as one of only 22 companies nation-wide to participate in the Matchmaker Benelux 86 Conference to be held in Europe, June 8-13, 1986.

The President, Marshall B. Borchert graduated in 1970 from the University of Nebraska with a BSEE degree.

For additional information, contact: Walter R. Campbell, Director of Sales and Marketing, Riser-Bond Instruments (402) 694-5201. □

Associate Roster

Note: Associates listed with * are Charter Members.

Jim Ackerman & Associates, Inc.,
1800 N. Meridian St. #410
Indianapolis, IN 46202
317—923-2353
(S9, Brokerage House)

Alpha Technologies
1305 Fraser St. D-G,
Bellingham, WA 98225
206—671-7703
(M9, Standby Power Supplies)

* **Anixter Communications,**
4711 Golf Road,
Skokie, IL 60076
312—677-2600
(D1)

Arts & Entertainment Network
555 Fifth Avenue
New York, NY 10017
212—661-4500
(S9)

The Associated Press
50 Rockfeller Plaza,
New York, NY 10020
212—621-1513
(S9 Automated News SVC)

Automation Techniques,
1550 N. 105th E. Ave.
Tulsa, OK 74116
918—836-2584
(M9)

Blonder-Tongue Labs, Inc.,
1 Jake Brown Rd.,
Old Bridge, NJ 08857
201—697-4000
(M1, 2, 4, 5)

Budco, Inc.,
4910 East Admiral Place,
Tulsa, OK 74115
1-800—331-2246
(D9, Security & Identification Devices)

Cable Constructors, Inc.,
Iron Mountain, MI 49801

Cable Video Entertainment,
111 8th Ave.,
New York, NY 10011
212—206-1219

CATEL,
4800 Patrick Henry Dr.,
Santa Clara, CA 95054
408—988-7722

Capscan, Inc.
P.O. Box 36,
Adelphia, NJ 07710
1-800—CABLETV or
222-5388
(M1, 3, 4, 5)

CBN Cable Network,
CBN Center
Virginia Beach, VA 23463
804—424-7777
(S9)

* **C-Cor Electronics, Inc.,**
60 Decibel Rd.,
State College, PA 16801
814—238-2461
(M1, 4, 5, S1, 2, 8)

CWY Electronics
405 N. Earl Ave.,
Lafayette, IN 74904
1-800—428-7596
(M9, D1)

Cable Graphic Sciences
7095 N. Clovis Ave.
Clovis, CA 93612
209—297-0508
(M9 Character Generators)

Communications Equity Associates,
851 Lincoln Center,
5401 W. Kennedy Blvd.,
Tampa, FL 33609
813—877-8844
(S3)

ComSonics, Inc.,
P.O. Box 1106,
Harrisonburg, VA 22801
1-800—336-9681
(M8, 9, S8, 9)

Com-Tek,
28310 Industrial Blvd. #H,
Street/P.O. Box/RFD
Hayward, CA 94545
415—785-4790

The Disney Channel
500 S. Buena Vista
Burbank, CA 91521
213—840-5080
(S4)

Ditch Witch,
P.O. Box 66,
Perry, OK 73077
1-800—654-6481
(M9)

The Drop Shop Ltd., Inc.,
Box 284,
Roselle, NJ 07203
1-800—526-4100 or
1-800—227-0700 (West)
(D3, 4, 5, 6, 7, 8, 9,
M5, 6, 7, 8, 9 Plastics)

Durnell Engineering Inc.,
Hwy 4 So.
Emmetsburg, IA 50536
712—852-2611
(M9)

Eagle Com-Tronics, Inc.,
4562 Waterhouse Rd.,
Clay, NY 13041
1-800—448-7474
(M9, Pay TV Delivery Systems & Products)

Eastern Microwave, Inc.,
3 Northern Concourse,
P.O. Box 4872,
Syracuse, NY 13221
315—455-5955
(S4)

Electroline TV Equipment, Inc.,
8750-8th Ave.,
St. Michel,
Montreal, Canada
H1Z 2W4
514—725-2471
(M4, 5, 7, 9, D7, 9)

Electron Consulting Associates,
Box 2029,
Grove, OK 74344
918—786-5349
(M2, D1, S1, 8)

ESPN,
ESPN Plaza,
Bristol, CT 06010
203—584-8477
(S9)

Charles Greene & Assoc. a division of AMCOM, Inc.,
Bldg. E, Suite 200,
5775 Peachtree-Dunwoody Rd., N.E.,
Atlanta, GA 30342
404—256-0228
(S9, Brokering & Consulting)

Group W Satellite Communications
41 Harbor Plaza Dr.,
P.O. Box 10210,
Stamford, CT 06904
203—965-6219
(S4)

Harmon & Company
5660 S. Syracuse Circle
Greenwood Plaza,
Englewood, CO 80111
303—773-3821
(S3)

Heller-Oak Communications
105 W. Adams St.,
Chicago, IL 60603
1-800—621-2139 * 7600
(S3)

Home Box Office, Inc.,
12750 Merit Dr.
Dallas, TX 75251
214—387-8557
(S4)

Ind. Co. Cable TV, Inc.,
P.O. Box 3799
Hwy. 167 N.
Batesville, AR 72501
501—793-4174
(D1)

* **Jerrold Division General Instrument**
2200 Byberry Road
Hatboro, PA 19040
(215) 674-4800
(M1, 2, 4, 5, 6, Converters)

* **Jerry Conn Associates, Inc.,**
P.O. Box 444,
Chambersburg, PA 17201
1-800—233-7600
1-800—692-7370 (PA)
(D3, 4, 5, 6, 7, 8)

KMP Computer Services, Inc.,
135 Longview Dr.,
Los Alamos, NM 87544
505—662-5545
(S4, 5)

Katek, Inc.,
215 Wood Ave.,
Middlesex, NJ 08846
201—356-8940

LRC Electronics, Inc.,
901 South Ave.,
Horseheads, NY 14845
607—739-3844
(M7)

Larson Electronics, Inc.,
311 S. Locust St.,
Denton, TX 76201
817—387-0002
(M9 Standby Power)

Distributors	Manufacturers	Service Firms
D1—Full CATV equipment line	M1—Full CATV equipment line	S1—CATV contracting
D2—CATV antennas	M2—CATV antennas	S2—CATV construction
D3—CATV cable	M3—CATV cable	S3—CATV financing
D4—CATV amplifiers	M4—CATV amplifiers	S4—CATV software
D5—CATV passives	M5—CATV passives	S5—CATV billing services
D6—CATV hardware	M6—CATV hardware	S6—CATV publishing
D7—CATV connectors	M7—CATV connectors	S7—CATV drop installation
D8—CATV test equipment	M8—CATV test equipment	S8—CATV engineering
D9—Other	M9—Other	S9—Other

Lifetime
1211 Avenue of the Americas
4th Floor
New York, NY 10036
212—719-7230
(S9, Programming)

Lindsay America, Inc.
P.O. Box 15775
1202 B West 19th St.
Panama City, FL 32405
904—769-2321

Long & Aldridge
1900 Rhodes Haverty Bldg.
134 Peachtree St.
Atlanta, GA 30043
404—681-3000
(S9, Law)

MA/COM Cable Home Group
P.O. Box 1729
Hickory, NC 28603
1-800—438-3331
(M2, 3, 7, S2)

Magnavox CATV Systems, Inc.
100 Fairgrounds Dr.,
Manlius, NY 13104
315—682-9105
(M2, 3, 7, S2)

Meyer, Capel, Hirschfeld Law Office
306 W. Church St.
P.O. Box 577
Champaign, IL 61820
217—352-7941
(S9, Law)

* **Microwave Filter Co.,**
6743 Kinne St., Box 103,
E. Syracuse, NY 10357
1-800—448-1666
(M9 Bandpass Filter)

Panasonic Industrial, Co.,
One Panasonic Way
Secaucus, NJ 07094
201—392-4109

Power and Telephone Supply Company, Inc.
530 Interchange Drive N.W.,
Atlanta, GA 30336
1-800—241-9996
(D1)

Quality RF Services, Inc.
850 Park Way
Jupiter, FL 33477
305—747-4998
1-800—327-9767
1-800—433-0107 (In Florida)
(M4, S9)

Regency Cable Products,
4 Adler Dr.
East Syracuse, NY 13057
1-800—292-0220

Request Television,
150 E. 58th St.,
39th Floor,
New York, NY 10155
212—223-1043

Riser/Bond Instruments
formerly
Av-Tek, Inc.,
Box 188,
Aurora, NE 68818
402—694-5201
(M8)

RMS Electronics
50 Antin Place
Bronx, NY 10462
1-800—223-8312
1-800—221-8857 (Poleline)
(M4, 5, 6, 7, 9)

Sadelco, Inc.,
75 West Forest Ave.,
Englewood, NJ 07631
201—569-3323
(M8)

Satellite Syndicated Systems, Inc.,
P.O. Box 470684
Tulsa, OK 74147
918—481-0881
(S9)

Scientific Atlanta,
P.O. Box 105600
Atlanta, GA 30348
404—441-4000

Showtime/The Movie Channel, Inc.
1633 Broadway,
New York, NY 10019
212—708-1600
(S4)

Studioline Cable Stereo
11490 Commerce Park Dr.
Reston, VA 22091
703—648-3200
(S9, Audio Program)

Telecorp Systems, Inc.,
5825-A Peachtree Corners E.
Norcross, GA 30092
404—449-6991

Telstar Marketing & Consulting
C.T.H."F" 2930
Blue Mounds, WI 53517
608—437-5460
(S9)

* **Texscan Corp.,**
3102 N. 29th Ave.,
Phoenix, AZ 85017
602—252-5021
(M4, M5, M8, M9)

* **Times Fiber Communications,**
358 Hall Avenue,
Wallingford, CT 06492
1-800—243-6904
(M3)

Tocom, Inc.,
P.O. Box 47066,
Dallas, TX 75247
214—438-7691
(M1, 4, 9 Converters)

* **Toner Cable Equipment, Inc.,**
969 Horsham Rd.,
Horsham, PA 19044
1-800—523-5947
In PA 1-800—523-492-2512
also 1-800—523-5947 (PA)
(D2, 3, 4, 5, 6, 7, 8, S4, 5)

Triple Crown Electronics, Inc.,
4560 Fieldgate Dr.,
Mississauga, Ontario,
Canada L4W 3W6
416—629-1111
Telex 06-960-456
(M4, 8)

Turner Broadcasting System,
1050 Techwood Dr.,
Atlanta, GA 30318
404—898-8500

TV Watch, Inc.,
1819 Peachtree Rd. N.E.
Atlanta, GA 30309
1-800—554-1155
(S9)

United Press International
220 East 42nd St.,
New York, NY 10017
212—682-0400
(S9 Automated News SVC)

United Video, Inc.,
3801 South Sheridan Rd.,
Tulsa, OK 74145
1-800—331-4806
(S9)

USA Network
303 East Ohio Street
Time & Life Bldg. Suite 2701
Chicago, IL 60611
312—644-5413
(S9)

Viewstar, Inc.,
705 Progress Ave.,
Unit 53,
Scarborough, Ontario,
Canada M1H 2X1
416—439-3170
(M9 Cable Converter)

Vitek Electronics
710 Narragansett Park Dr.
Pawtucket, RI 02861
401—724-4400

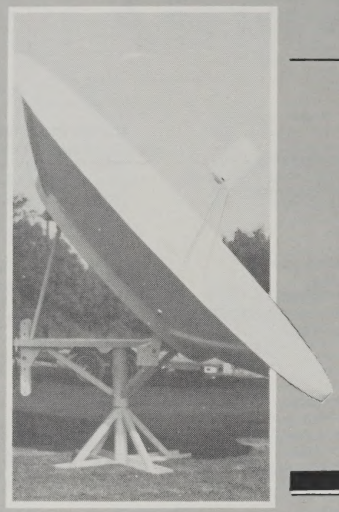
Walsh, Walsh, Sweeney & Whitney, S.C.
P.O. Box 1269,
Madison, WI 53701
608—257-1491
(S9)

* **Wavetek Indiana**
5808 Churchman,
Beech Grove, IN 46107
1-800—428-4424
TWIX 810—341-3226
(M8)

Weatherscan,
Loop 132,
Throckmorton Hwy.,
Olney, TX 76374
817—564-5688
(D9, Sony Equip. Dist., M9 Weather Channel Displays)

Western Towers
Box 2040
San Angelo, TX 76902
915—658-6539/653-5291
(M2, 9 Towers)

Zenith Radio Corp.,
1000 N. Milwaukee Ave.
Glenview, IL 60025
312—391-8195
(M1, 6)



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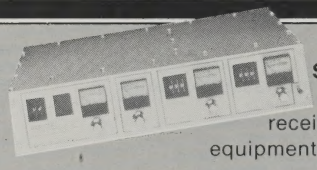

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